

Flight Scientist Report
Monday 6/28/2021 ACTIVATE RF90

Flight Type: Statistical Survey Flight
Flight Route: ATLIC ZIBUT 3715N06915W ZIBUT ATLIC
Special Notes:

King Air

Pilot report (Wusk):

Planned as a UC-12 double flight day; cooperative flight with the HU-25. Planned route: ATLIC ZIBUT 3715N06915W ZIBUT ATLIC. UC12 takeoff from runway 08 ahead of HU-25. Good ATC departure and climb to FL280. Generators held a acceptable balance. Before ZIBUT the turnpoint was changed to 3745N06930W. Profile out to TP and back to ZIBUT was nominal. Stayed with NY Center VHF. Proceeded to ATLIC and started the descent into Langley. ATC gave vectors for a RNAV 26. Normal landing at KLFY, runway 26. 4x dropsondes deployed; ZIBUT EB, turn point, 1/2 to ZIBUT WB, East of ATLIC. Crew was Delaney, Wusk, Harper. Second flight of day planned for a statistical survey out OXANA. Second flight cancelled due to HU25 APU issues at startup.

Flight scientist report (Harper):

UC12 Takeoff:12:29:15utc

HU25 takeoff ~ 12:32utc

UC12 landing: 15:44utc

Aircraft coordination: UC12 3-4min behind HU25 on outbound leg. UC12 and HU25 less than 30sec difference on inbound leg toward ZIBUT. Can see HU25 in nadir camera 😊

Sonde 1: 13:28utc at ZIBUT. Vertical speed was higher than normal at the higher altitudes but slowed down to typical speed in lower altitudes.

Sonde 2: 14:12utc at inbound turn.

Sonde 3: 14:35utc . Halfway between inbound turn and ZIBUT

Sonde 4: 15:26utc near coast

Very thin scattered cirrus above starting approx 14min before easternmost turn.

No instrument issues for HSRL, AVAPS . RSP ran well but it's disk filled up on the way down.

Falcon

Pilot report (Baxley):

Takeoff (Z): 1230 / Land: 1550

Science flight for the HU-25 in support of ACTIVATE Campaign #4, conducted cooperatively with the UC-12. Route of flight planned for KFLI-ATLIC-ZIBUT-3530N07145W-ZIBUT-ATLIC-KLF. Departed Rwy08 direct to ATLIC climbing to 5k ft MSL for initial transit, then descending to 500' MSL approximately 25 nautical miles east of KLF. Winds were moderate (<20 kts) out of the west throughout the flight, with clouds throughout most portions of the route from 1000' – 5000' MSL. Time coordination with the UC-12 was always within 10 minutes, and usually less than 2 minutes. All objectives were achieved and with no discrepancies noted.

Pilots: Elder/Baxley

QNCs: Crosbie/Winstead

Flight scientist report (Crosbie):

This flight was similar to RF88 except that it was conducted outside the ZIBUT corridor. The cloud conditions were mostly shcu with some developed regions that appeared to be organized as convergence lines/streets. The conditions were quite close to being suitable for a process study but the second planned flight for this day was planned as a stat survey because the conditions appeared to be a little too dry to have a high likelihood that a suitable process target would materialize. The module was fairly standard and the aerosol conditions were quite uniform comprising mainly SO₄ and low ORG. (3 full cloudy, 1 part cloudy, 2 clear)

Eddie:

12:31:10 Takeoff

12:41:45 Just passed ship. Spikes in number conc from ship.

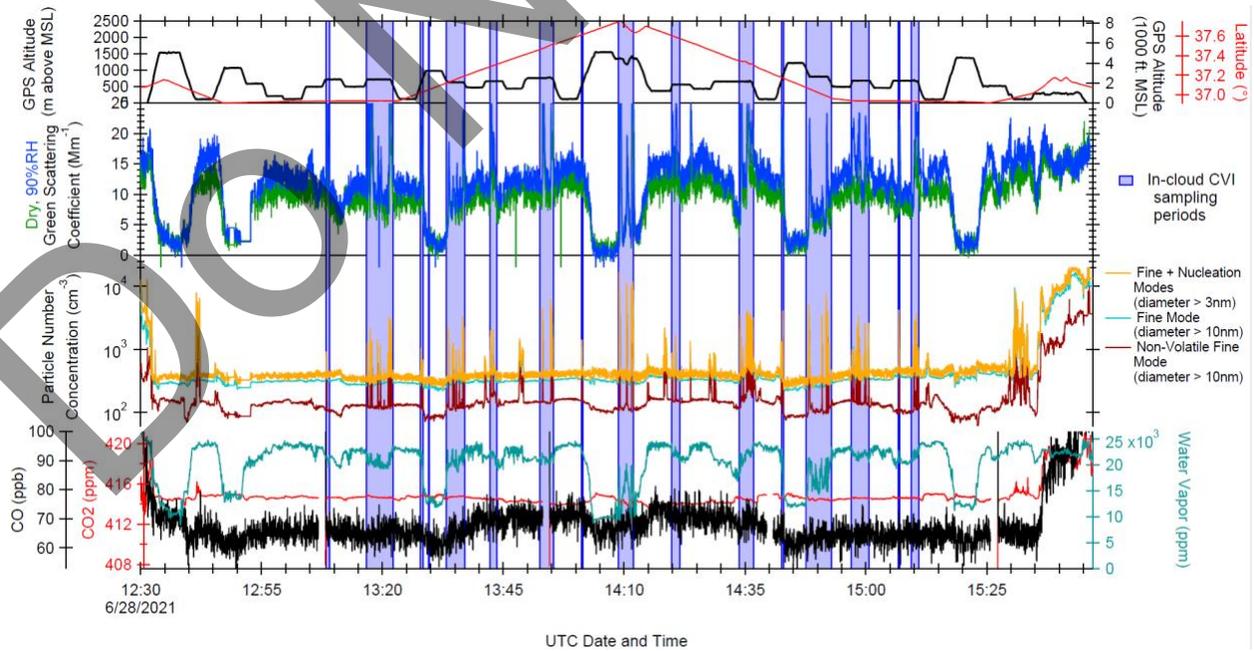
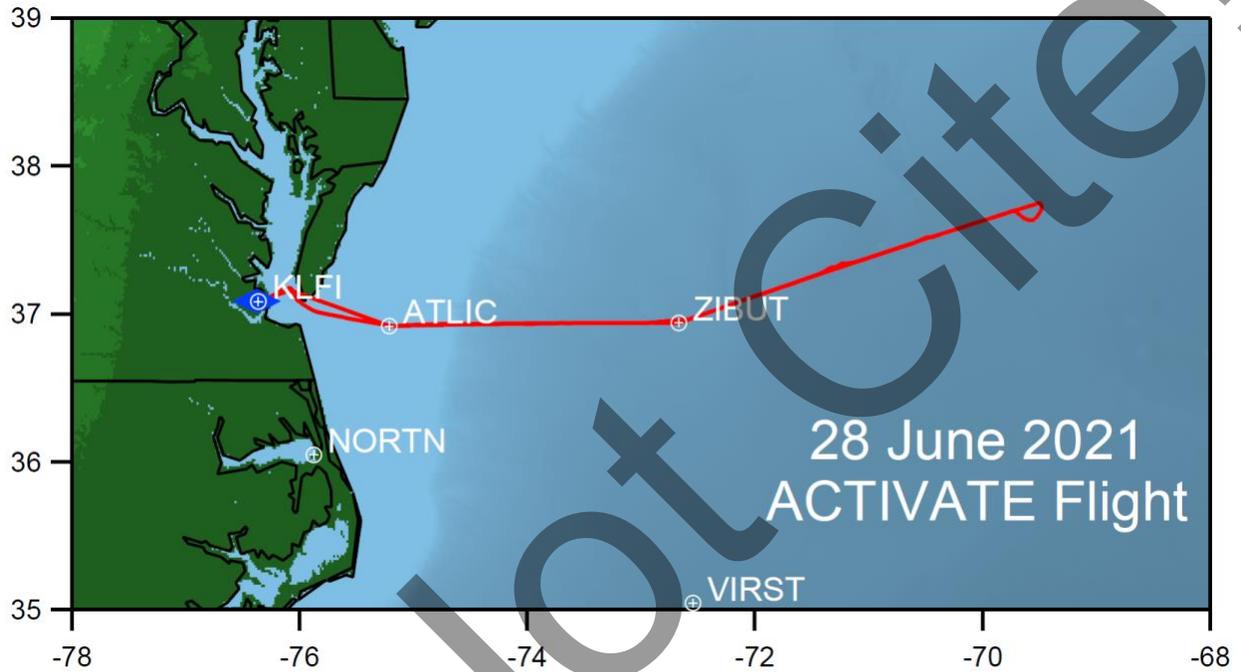
12:57 Low number concentrations today

15:37 WCM & humidifier off in preparation for landing

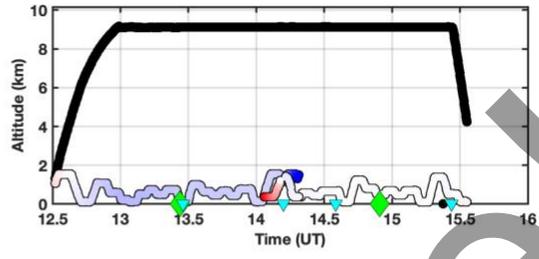
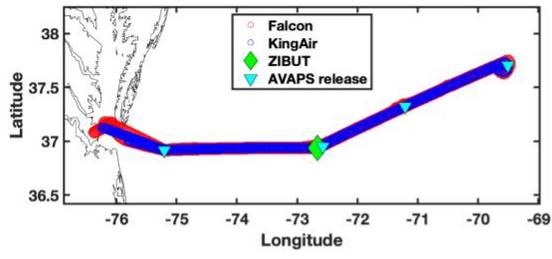
15:38 Lost DAQ screen for a couple of minutes

15:45:57 Landing

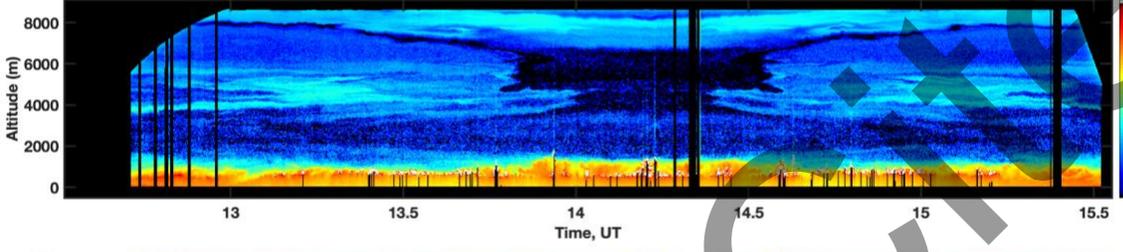
Note: Afternoon canceled because Falcon APU could not be started.



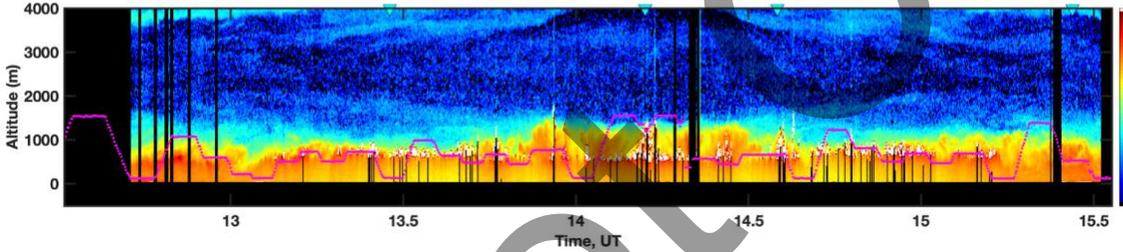
20210628 - ACTIVATE - KingAir and Falcon flight tracks



Time Difference (UC12-H125) (min)



Aerosol Scattering Ratio (532nm)



Aerosol Scattering Ratio (532nm)

DO NOT

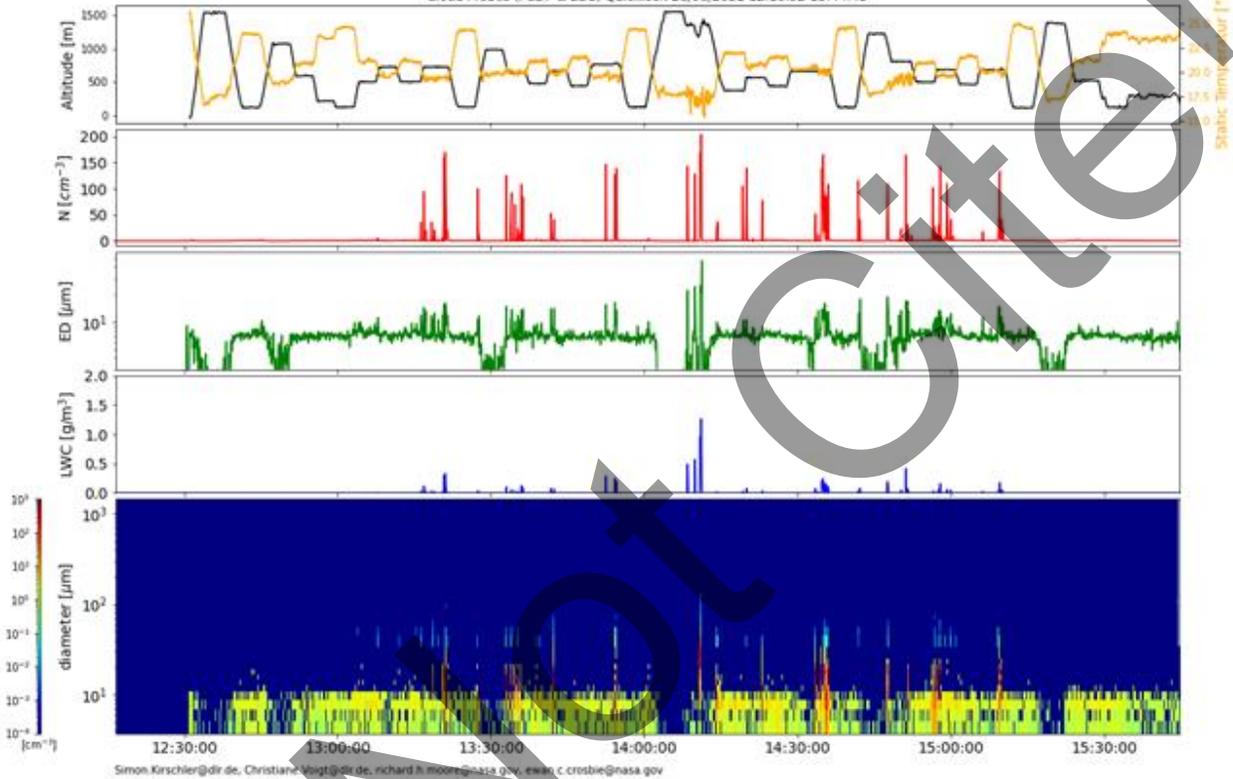
Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie

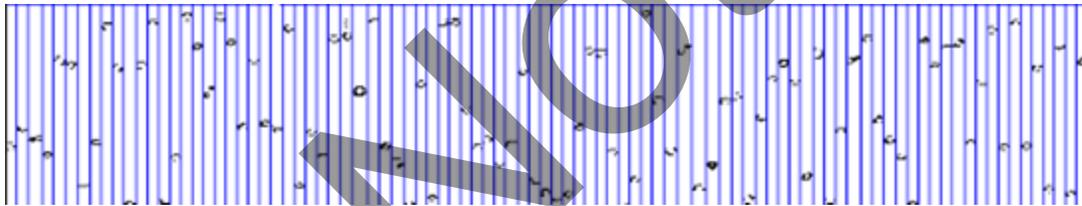
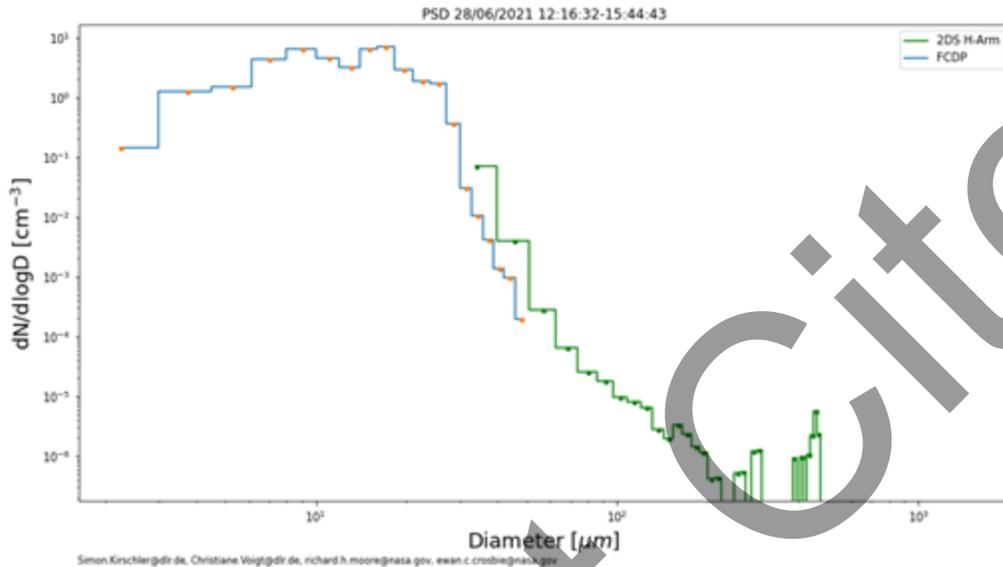


Cloud Probes (FCDP & 2DS) Quicklook 28/06/2021 12:16:32-15:44:43



PSD ACTIVATE

preliminary data, only for quicklook use
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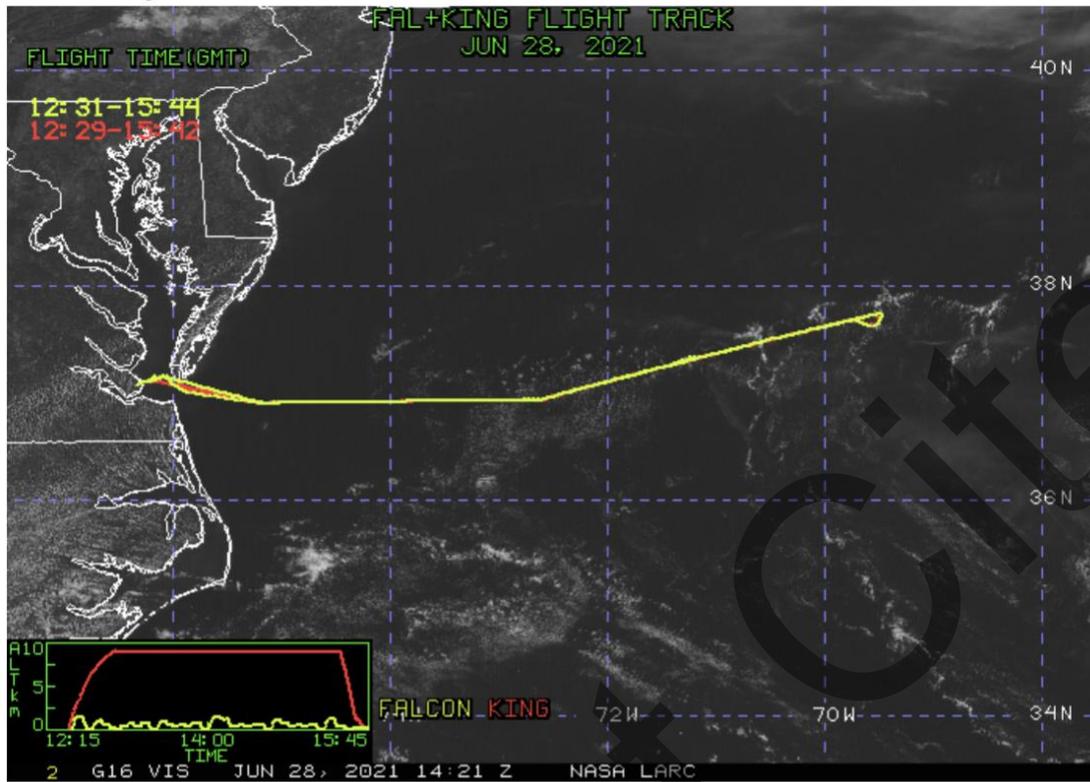


Only pure liquid clouds with drizzle.

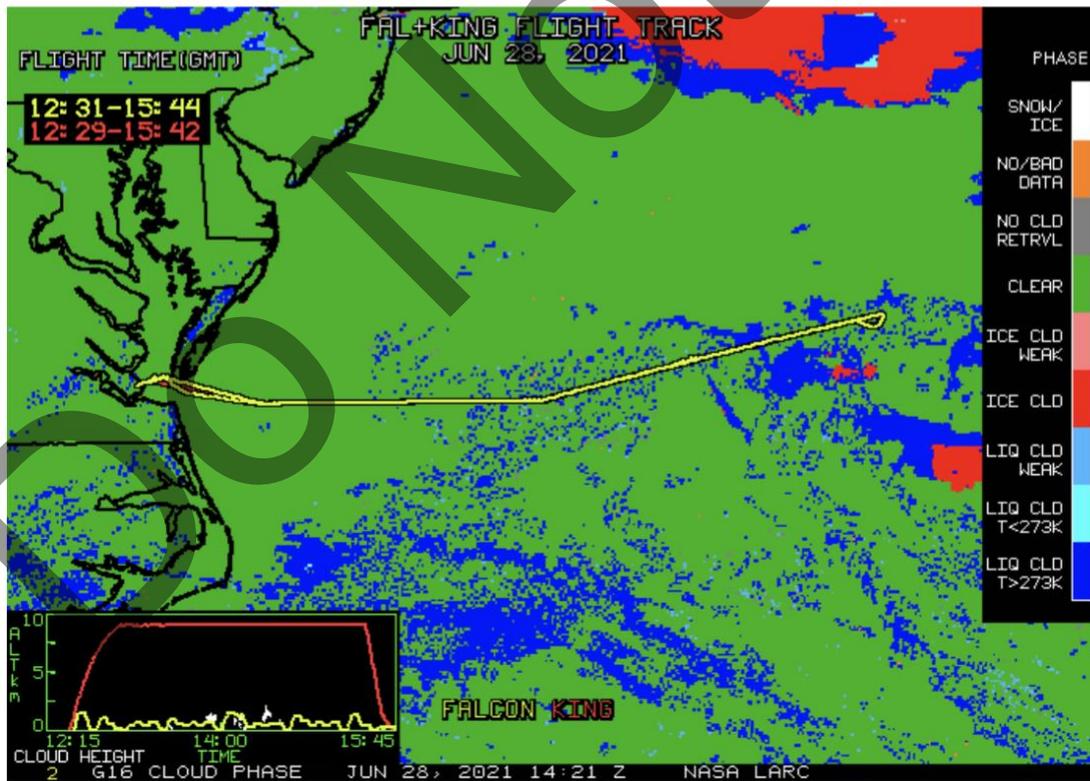
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 90, 14:21 UTC Jun 28, 2021

Do Not Cite!

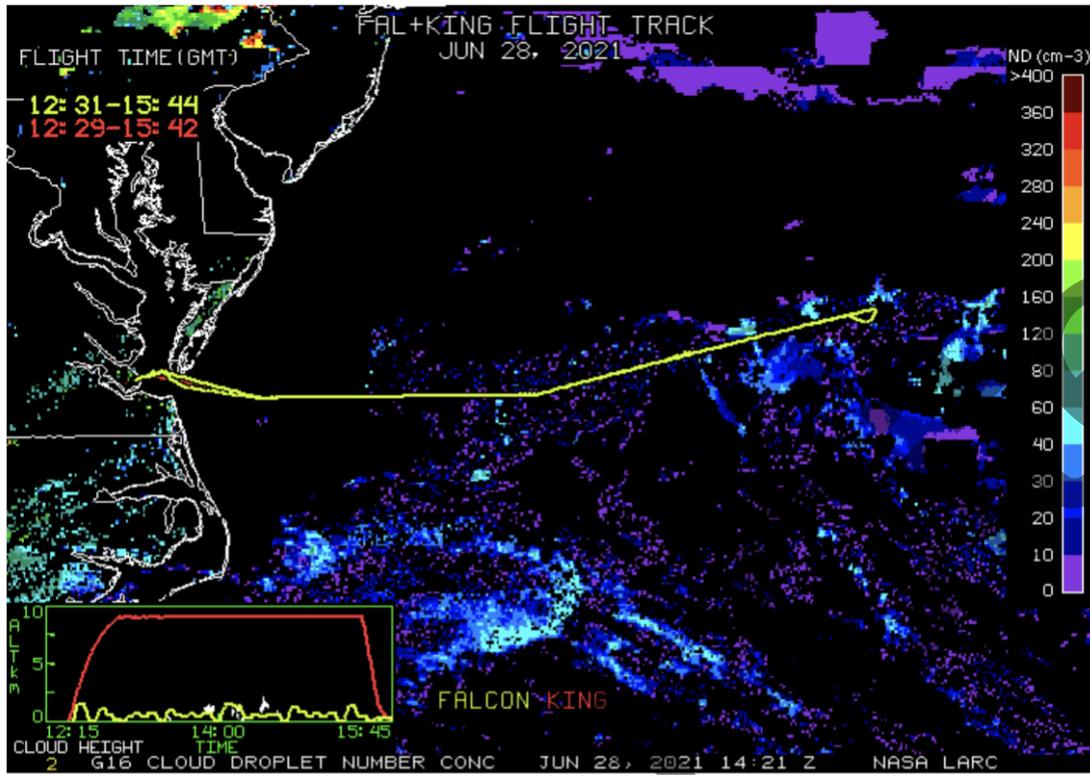
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

